



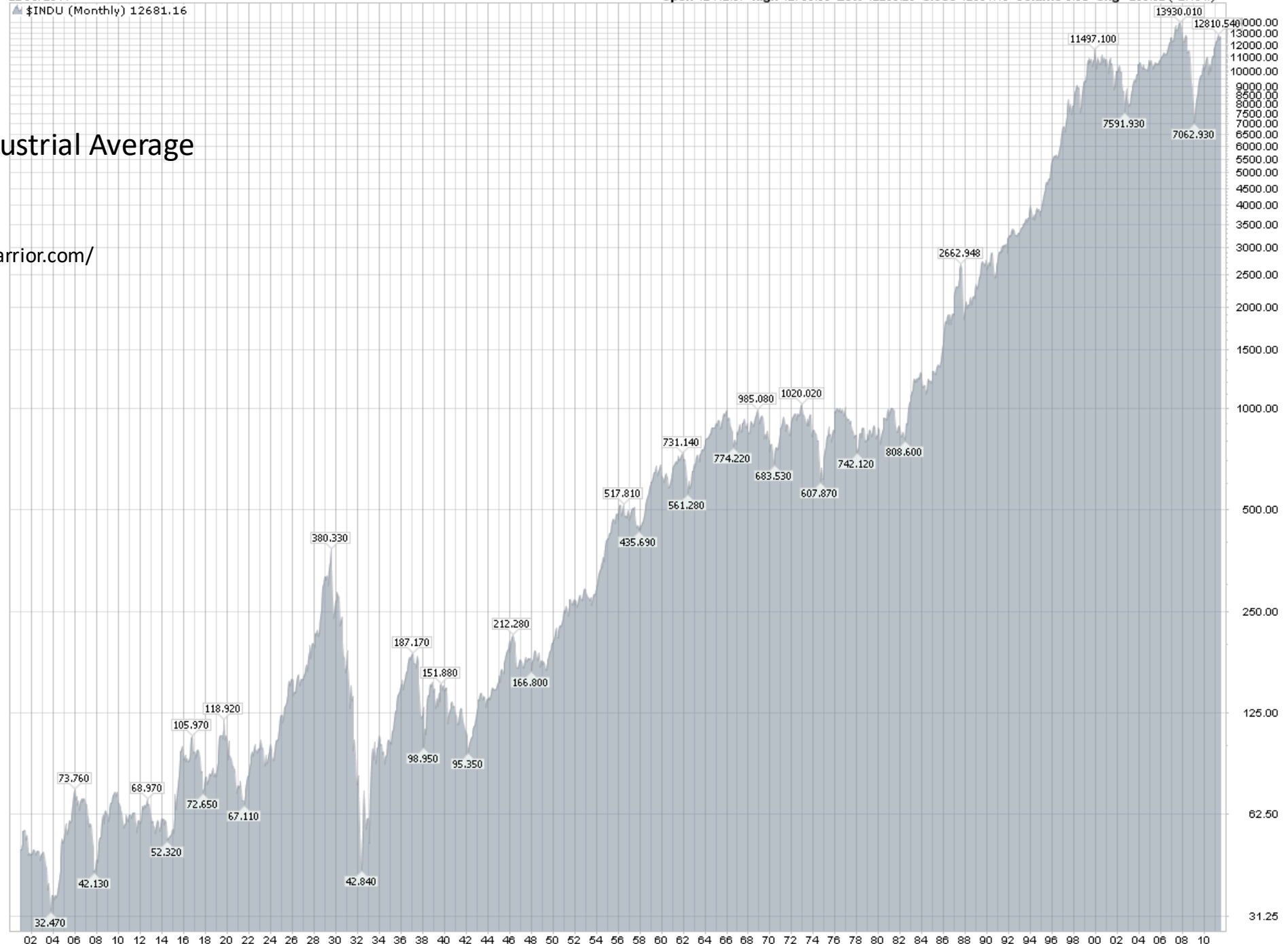
Computer Trading

November 2023



\$INDU (Dow Jones Industrial Average) INDX
22-Jul-2011
▲ \$INDU (Monthly) 12681.16

© StockCharts.com
Open 12412.07 High 12753.89 Low 12296.23 Close 12681.16 Volume 9.8B Chg +266.82 (+2.15%) ▲



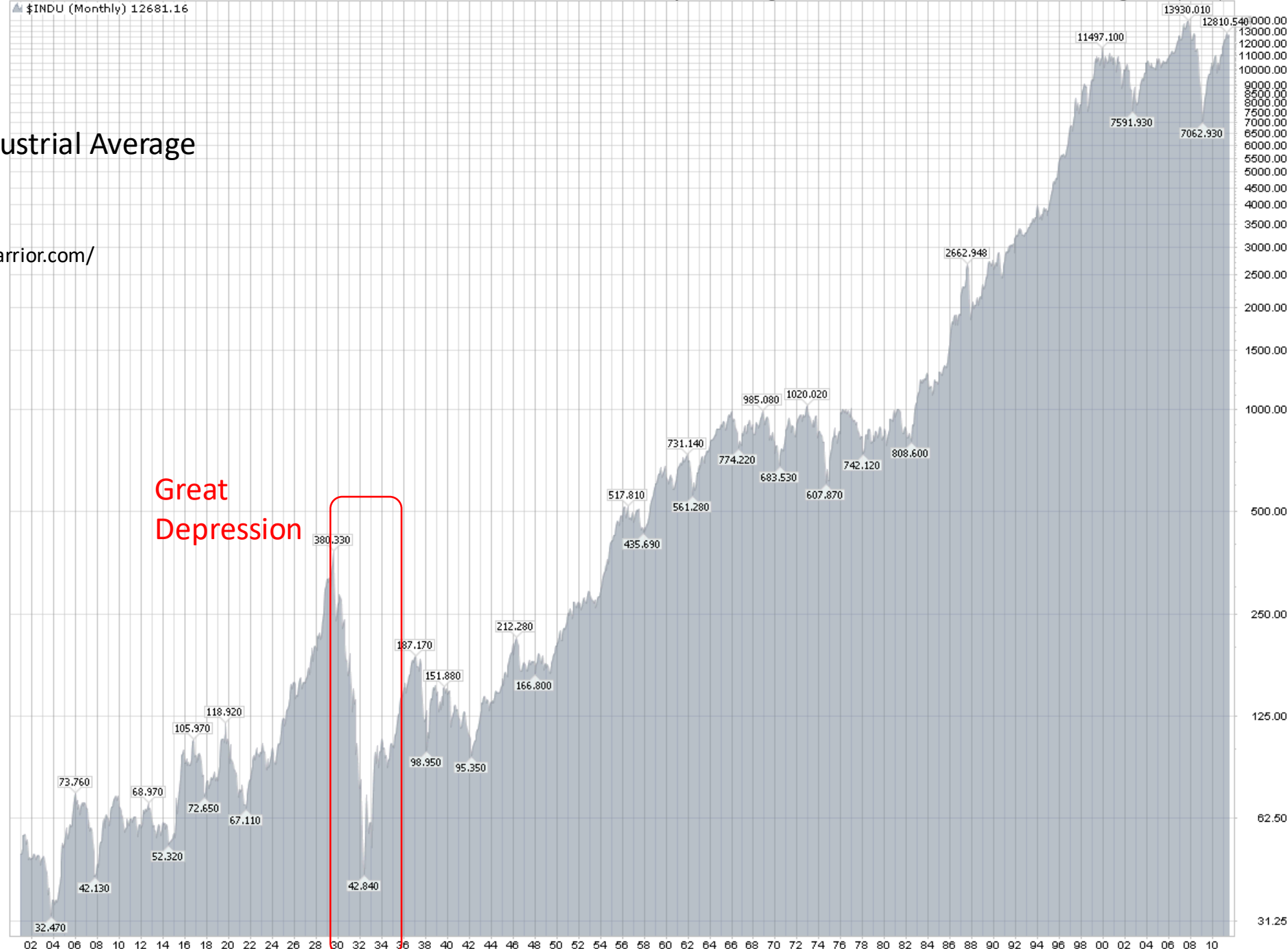
History of Dow Jones Industrial Average 1900-2010

Source: <http://www.stock-trading-warrior.com/Stock-Market-History-Graph.html>



\$INDU (Dow Jones Industrial Average) INDXX
22-Jul-2011
▲ \$INDU (Monthly) 12681.16

© StockCharts.com
Open 12412.07 High 12753.89 Low 12296.23 Close 12681.16 Volume 9.8B Chg +266.82 (+2.15%) ▲



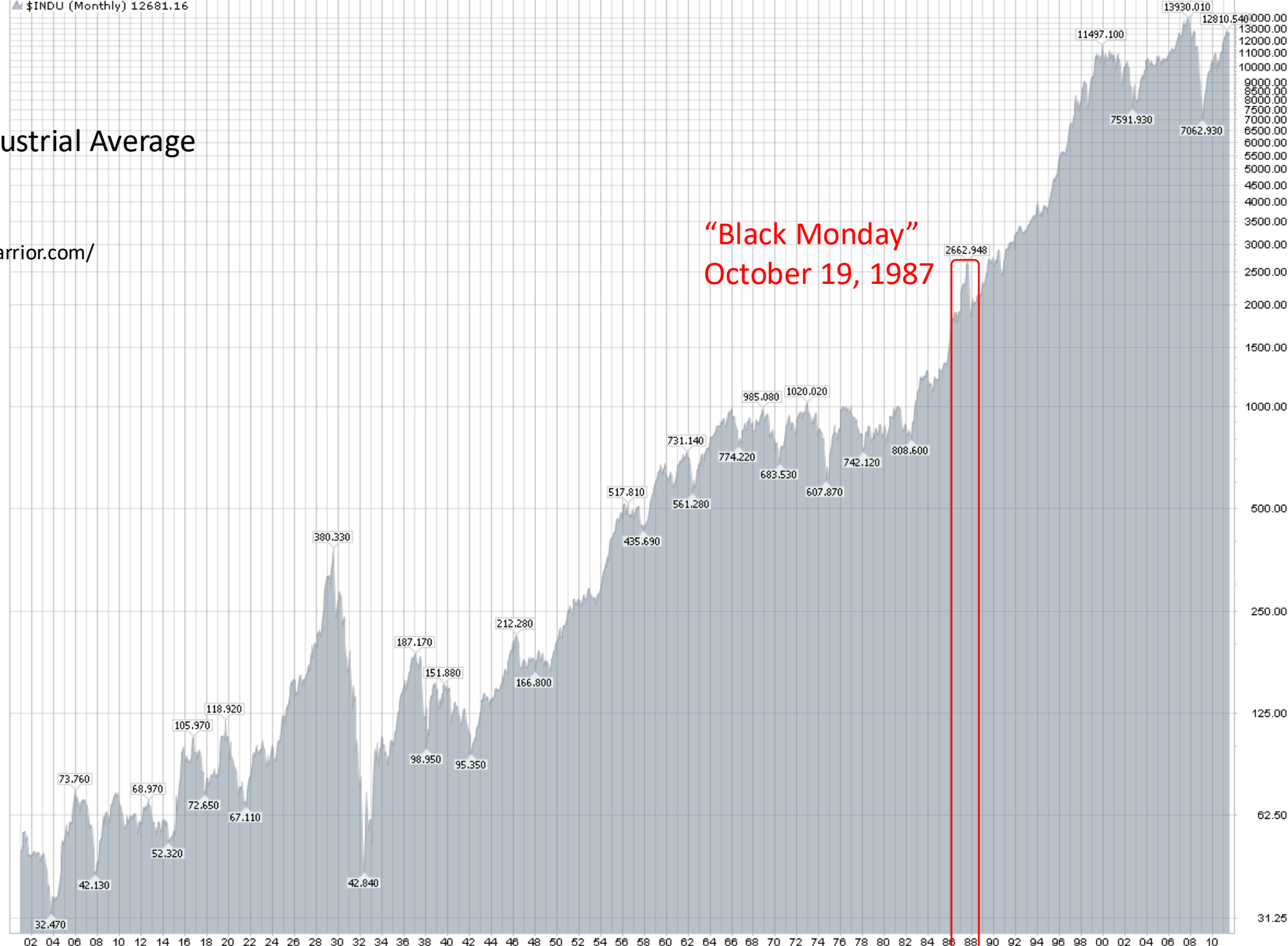
History of Dow Jones Industrial Average 1900-2010

Source: <http://www.stock-trading-warrior.com/Stock-Market-History-Graph.html>



\$INDU (Dow Jones Industrial Average) INDX
22-Jul-2011
▲ \$INDU (Monthly) 12681.16

© StockCharts.com
Open 12412.07 High 12753.89 Low 12296.23 Close 12681.16 Volume 9.8B Chg +266.82 (+2.15%) ▲



History of Dow Jones Industrial Average 1900-2010

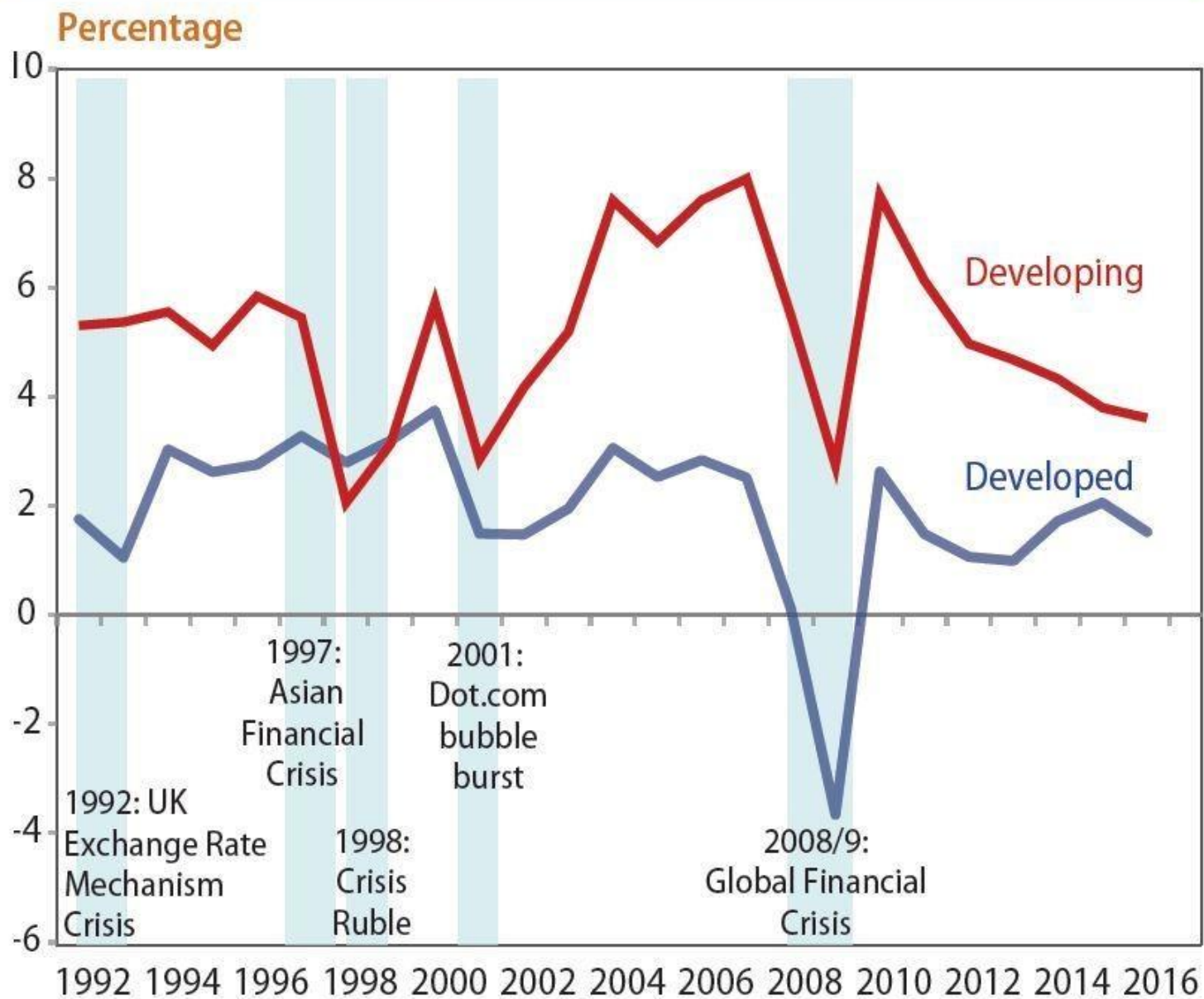
Source: <http://www.stock-trading-warrior.com/Stock-Market-History-Graph.html>

“Black Monday”
October 19, 1987



Source: <https://www.weforum.org/agenda/2018/11/the-next-economic-crisis-could-cause-a-global-conflict-heres-why/>

Figure 1: World GDP growth, 1998-2015



Source: UN/DESA.



S&P 500 Index - 1W - SP - TradingView

● O3641.41 H3689.73 L3638.65 C3676.01

USD ▾

3676.24 0.00 3676.24

S&P 500 weekly

Prior week shed nearly 10%, setting the stage for far worse to come.

Black Monday carried on with the selling, losing nearly 25% more at its lowest

280.00
276.28

270.00

260.00

250.00

240.00

230.00

220.00

210.00





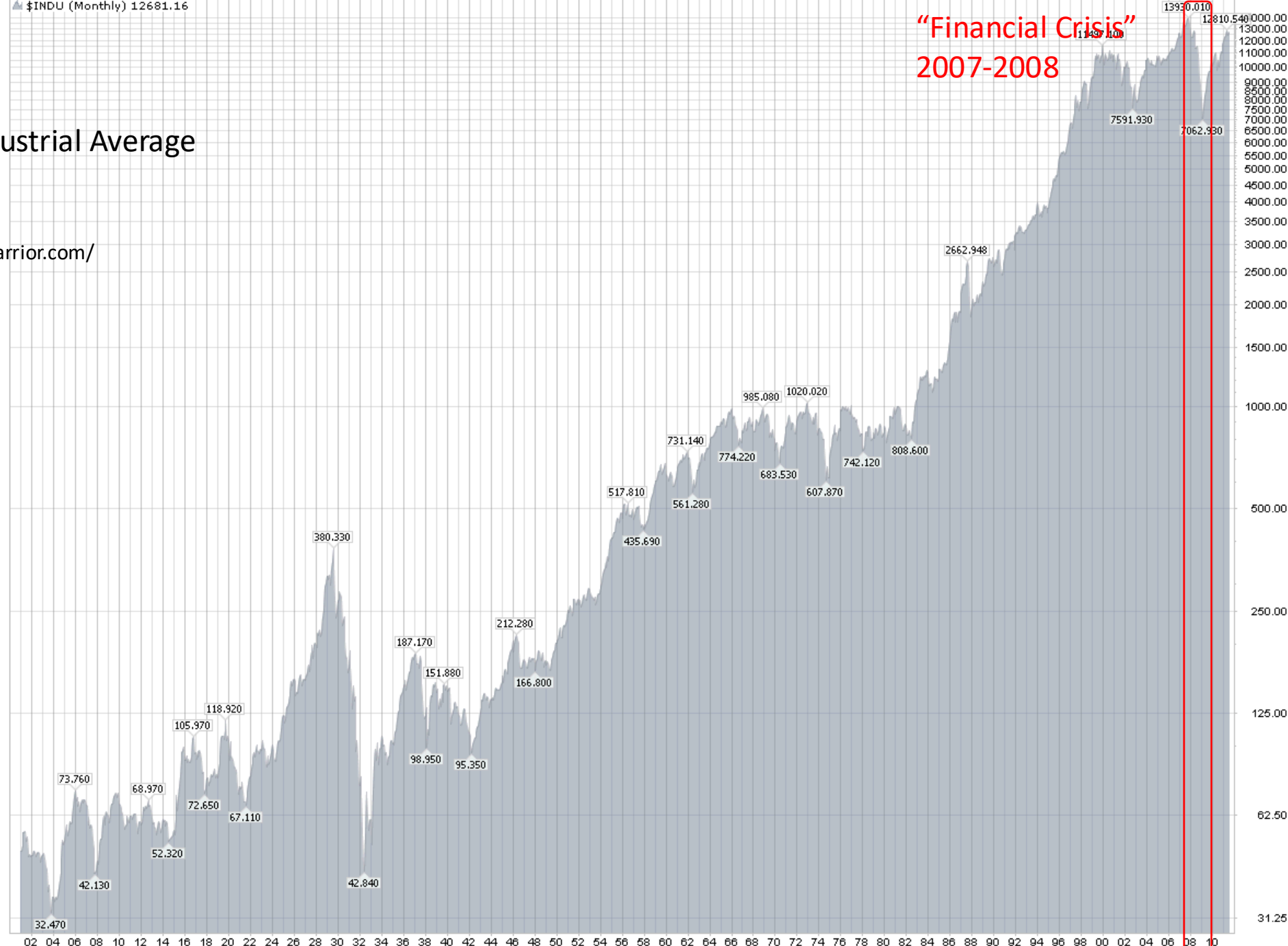
Contribution of Computer Trading

- “One automated trading strategy that appears to have been at the center of exacerbating the Black Monday crash was portfolio insurance. The strategy is intended to hedge a portfolio of stocks against market risk by short-selling stock index futures. This technique, developed by Mark Rubinstein and Hayne Leland in 1976, was intended to limit the losses a portfolio might experience as stocks decline in price without that portfolio's manager having to sell off those stocks.
- “These computer programs automatically began to liquidate stocks as certain loss targets were hit, pushing prices lower. To the dismay of the exchanges, program trading led to a domino effect as the falling markets triggered more stop-loss orders. The frantic selling activated yet further rounds of stop-loss orders, which dragged markets into a downward spiral. Because the same programs also automatically turned off all buying, bids vanished all around the stock market at basically the same time, further exacerbating the declines.”
- Source: <https://www.investopedia.com/ask/answers/042115/what-caused-black-monday-stock-market-crash-1987.asp>



\$INDU (Dow Jones Industrial Average) INDX
22-Jul-2011
▲ \$INDU (Monthly) 12681.16

© StockCharts.com
Open 12412.07 High 12753.89 Low 12296.23 Close 12681.16 Volume 9.8B Chg +266.82 (+2.15%) ▲



History of Dow Jones Industrial Average 1900-2010

Source: <http://www.stock-trading-warrior.com/Stock-Market-History-Graph.html>